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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/645,499

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Satoshi Yoshida

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EXAMINER

RODEE, CHRISTOPHER D

ART UNIT

PAPER NUMBER

1756

DATE MAILED: 11/05/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/645,499

Applicant(s)

YOSHIDA ET AL.

Examiner

Christopher RoDee

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 23 September 2004.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) See Continuation Sheet is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 83-88, 90, 91, 95, 97-104, 109-112, 114, 116-126, 128, 129, 133 and 135-145 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____

Continuation of Disposition of Claims: Claims pending in the application are 83-88,90,91,95,97-104,109-112,114,116-126,128,129,133 and 135-145.

DETAILED ACTION

Claim Objections

Claims 85-88, 90, 91, 98-102, 104, 118, 123-126, 128, 129, 136-140, and 143-145 are objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s) because the claims refer to the toner or developer of the process cartridge. As discussed throughout prosecution the toner and developer are materials worked upon by the process cartridge and do not patentably limit the process cartridge. As a result, the above noted claims, which only limit the toner or developer, do not further limit the claims.

Claim Rejections - 35 USC § 103

The text of those sections of Title 35, U.S. Code not included in this action can be found in a prior Office action.

Claims 83-88, 90, 91, 95, 97-104, 109-111, 114, 116-126, 128, 129, 133, and 135-145 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chigono *et al.* in US Patent 6,128,456 in view of Itami in US Patent 6,258,499.

These references were presented in the last Office action for the features present in claim 115, whose limitations have been added to the independent claims along with those of claim 113. All other limitations for the above rejected claims were previously found to be present in Chigono alone, including the limitations of claim 113. Thus, the combination of limitations present in the claims are fully discussed in the last Office action. With respect to claim 114, Embodiment 2 in Chigono teaches metal oxide conductor particles as tin oxides.

In response to this rejection, applicants note that it would not have been obvious to prepare Chigno's image-bearing member with Itami's contact angle (response p. 19).

Applicants rely on specification page 161 for a discussion of useful volume resistivity for the member's surface-most layer. Applicants also rely on specification page 166 for a discussion of an effective surface contact angle and its effects.

The importance of this combination of features is demonstrated, according to applicants, on specification pages 192-194 where certain photosensitive members are produced.

Photosensitive Member 1 has both a volume resistivity for the surface-most layer and water contact angle within the scope of the claims while Photosensitive Members 2-4 have at least one of these characteristics outside the scope of the claims. Examples 23-26 use each of these respective photosensitive members and show benefits for the inventive member (Photosensitive Member 1) as compared to those outside the scope of the claims. A review of Itami and the claims shows that only Photosensitive Member 2 would be representative of the prior art because this member has the claimed volume resistivity, as does Itami.

A review of the specification examples shows that Example 24 uses Photosensitive Member 2 and produces results that are acceptable for the invention. As stated on page 236, "Compared with Example 23, Example 24 using Photosensitive member 2 exhibited some inferior results regarding the transferability and pattern recovery. Along with this, spotty image soils appeared at a part of the image. These defects were however recognized to be within an acceptable range." It is apparent from this disclosure that there is no unexpected result for the process cartridge having Photosensitive Member 2 (Example 24) as compared to the process cartridge having Photosensitive Member 1 (Example 23). Although there are differences reported for the respective examples, the evidence does not show "that the differences in results are in fact unexpected and unobvious and of both statistical and practical significance."

Ex parte Gelles, 22 USPQ2d 1318, 1319 (Bd. Pat. App. & Inter. 1992). By applicants' own admission in the specification, the differences are not of practical significance because the comparative example's process cartridge still gives an acceptable result.

The differences in results between these two examples are also not shown to be significant because the difference in image density is the same for both examples, the difference in initial fog is shown to be the same (both received identifier "A"), and the difference in fog after 3500 sheets is not significantly different. Example 24 produced a fog of "B" while Example "A" produced a fog of "A". As discussed in the specification on page 233, Fog of "A" corresponds to a fog below 1.5 % while Fog of "B" corresponds to a level of 1.5 % to below 2.5 %. These identifiers do not show a statistically different result because a value of 1.5 % and a value of just below 1.5 % would have the respective identifiers yet there is no indication that the difference in result is significant. Such a small numeric difference, which is permitted within the scheme used, does not show an unexpected result. This is particularly the case because both are acceptable. Similar remarks are pertinent for transferability, pattern recovery, and image soil. The results in all factors were acceptable for each of Examples 23 and 24 and the differences between the identifiers for each example are the smallest difference permitted. This does not show an unexpected result.

Further, the water contact angle taught by Itami would appear to provide the advantages obtained. As noted in the last Office action, it would have been obvious to one having ordinary skill in the art at the time the invention was made to prepare the surface layer of Chigono's image-bearing member so that it has a contact angle with water of at least 90° because Itami discloses that this feature prevents filming of the toner on the surface of the image-bearing member. Reduced toner filming would improve each of the factors specified in Table 6 (spec. p.

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255), particularly fog, image soil, and pattern recovery. The results obtained in the specification for Example 24 are not unexpected.

The Examiner must also note that there only a single process cartridge within the scope of the claims is demonstrated in the Examples; that is, a process cartridge having a volume resistivity of 5×10^{12} ohm-cm and a water contact angle of 102 degrees. The instant specification includes a range of volume resistivity of from 1×10^9 ohm-cm to 1×10^{14} ohm-cm. This range is taught by Chigono (col. 17, l. 57-59). The claims also include a wide water contact angle of 85° or more while Itami teaches a water contact angle of at least 90° (Abstract). The evidence is not commensurate in scope with the claims because it presents only a single photosensitive member within the scope of the claimed process cartridge and the applied art teaches nearly the same scope of characteristics as claimed.

Based on the totality of the evidence, the rejection is maintained.

Claim 112 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chigono *et al.* in US Patent 6,128,456 in view of Itami in US Patent 6,258,499 as applied to claims 83-88, 90, 91, 95, 97-104, 109-111, 114, 116-126, 128, 129, 133, and 135-145 above, and further in view of Nagase *et al.* in US Patent 6,081,681.

Chigono and Itami were described above. These references do not disclose the use of a charging member brush having electroconductivity that is also supplied with a voltage.

Nagase discloses a process cartridge having an image-bearing member 1, an electroconductive contact charging brush having a voltage 2, a developing means 4 having a gap of 300 μm (col. 8, l. 64) between it and the member 1, and either a cleaning means 7 or is removed by the developing means to recycle the toner (Figs. 1 & 6; Embodiments 1 and 2; col. 8, l. 15 - col. 16, l. 9). Charge facilitator particles, such as electroconductive zinc oxide (a non-

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magnetic material) having a resistivity of $10^6 \Omega\text{cm}$ (col. 14, l. 62), are applied as part of the toner (col. 14, l. 46-67) or by a separate means for this purpose **8** (col. 9, l. 46-59).

It would have been obvious to one having ordinary skill in the art at the time the invention was made to use an electroconductive contact charging brush having a voltage as the charging means in Itami because Nagase teaches that this is an effective charging device for an electrophotographic photosensitive member.

Conclusion

Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a first reply is filed within **TWO MONTHS** of the mailing date of this final action and the advisory action is not mailed until after the end of the **THREE-MONTH** shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than **SIX MONTHS** from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Christopher RoDee whose telephone number is 571-272-1388. The examiner can normally be reached on most weekdays from 6:00 to 4:30.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mark Huff can be reached on 571-272-1385. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

cdr
3 November 2004



CHRISTOPHER RODEE
PRIMARY EXAMINER